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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,535	01/28/2004	Yoshiharu Kashiwakura	FUJI:288	2214
37013	7590	05/13/2005	EXAMINER	
ROSSI & ASSOCIATES P.O. BOX 826 ASHBURN, VA 20146-0826			RICKMAN, HOLLY C	
			ART UNIT	PAPER NUMBER

1773

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/766,535

Applicant(s)

KASHIWAKURA ET AL.

Examiner

Holly Rickman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-11,13,16-18 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-11,13,16-18,20-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The provisional rejection of claims 1-3 and 10-13 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4-6 of copending Application No. 10/436,249 is withdrawn in view of the abandonment of 10/436,249 and applicant's amendments to the claims.

Claim Rejections - 35 USC § 102

2. The rejection of claims 1-2, 4, 6, 8-12, 14, 16, 18-19, 21, and 23 under 35 U.S.C. 102(b) as being anticipated by Lambeth et al. (US 5993956) is withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 6-11, 13, 16-18, and 20-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Lambeth et al. (US 5993956).

Lambeth et al. disclose a magnetic recording medium having a non-magnetic substrate, a seedlayer and underlayer formed from a Cr or Cr alloy material such as CrV, CrTi or CrW (i.e.,

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non-magnetic bcc material), a CrMn alloy layer, an intermediate layer formed from Cr or a Cr alloy as previously described, a Co alloy magnetic layer directly thereon and a protective overcoat. The reference teaches that the thickness of the CrMn layer is 3 nm and the Mn content in this layer is at least 10 at % (see abstract; Fig. 1b; col. 4, lines 22-31; col. 5, line 60 to col. 6, line 6; col. 6, lines 28-31; col. 7, lines 27-28; col. 8, lines 28-31 and lines 45-59; col. 9, lines 14-16; col. 13, lines 23-24).

The reference fails to disclose the claimed thickness range of 0.5-2.5 nm for the CrMn layer. The reference teaches that the thickness of the CrMn layer is “preferably” 3 nm but may be thinner and still be “effective at producing the desired magnetic properties” (col. 6, lines 33-35).

It would have been obvious to one of ordinary skill in the art at the time of invention to optimize the thickness of the CrMn layer given the teaching in Lambeth et al. that thickness values below 3 nm can be used. The reference teaches that the thickness of the CrMn layer affects the epitaxial crystalline structure in the magnetic layer. Thus, thickness is a result effective parameter in this case. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

5. Applicant's arguments filed 2/17/05 have been fully considered but they are not persuasive.

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Applicant argues that Lambeth et al. fails to teach or suggest a CrMn layer thickness within the claimed range of 0.5-2.5 nm. Applicant maintains that the reference teaches a minimum thickness of 3.0 nm for this layer and “does not provide an enabling disclosure for achieving a Cr-Mn layer having a thickness as small as 2.5 nm.” As such, Applicant maintains that Lambeth et al. teaches away from the claimed range.

The examiner respectfully disagrees. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Applicant’s argument that Lambeth et al. is not an enabling disclosure for a thickness as small as 2.5 nm presupposes that the level of ordinary skill in the art at the time of invention would not have been sufficient to enable a person of ordinary skill in the art to adjust the thickness of the CrMn layer below the preferred minimum of 3 nm. However, Lambeth et al. specifically states that thicknesses below 3 nm can be used:

“[t]he skilled artisan will appreciate that, based on guidance provided herein, Mn-containing layers thinner than 3 nm may also be effective in producing the desired magnetic properties.” See col. 6, lines 31-35.

Thus, Applicant’s presupposition is not supported by Lambeth’s disclosure. Moreover, the record presents no objective evidence to support a position that there is a patentable distinction between the claimed value of 2.5 nm and thickness disclosed by Lambeth. There does not

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appear to be any distinction in the properties of the claimed article and the prior art article. The numbers are so close, they appear to overlap. In any event these values would be minor obvious variations and expected to have the same properties. *See Titanium Metals Corporation vs Banner*, 778 F. d. 775, 227 USPQ 773 (Fed. Cir. 1985).

Applicant's argument that Lambeth et al. fails to teach a Cr/Cr alloy layer in contact with the magnetic recording layer is not persuasive. Applicant admits that the reference teaches the use of an intermediate layer between the CrMn layer (col. 5, lines 66-67, col. 9, lines 5-20 and col. 12, lines 38-45 were referenced in applicant's arguments). Thus, the position that the reference teaches away from using a CrMn layer such that it is not in direct contact with the magnetic layer is unfounded.

Finally, Applicant argues that if a layer were inserted between the CrMn layer and the magnetic layer, the Mn containing layer would have to be sufficiently thicker. The examiner does not find this argument to be persuasive because there is no evidence of record to support this statement.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Holly Rickman
Primary Examiner
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